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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/256,227	02/24/99	KISO	S 35.C13358

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EXAMINER

DAVIS, J

ART UNIT

PAPER NUMBER

2822

DATE MAILED:

11/16/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/256,227

Applicant(s)

KISO ET AL.

Examiner

J. L. Davis

Art Unit

2822

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 September 2000.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 2-13 and 20-25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 14-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 February 1999 is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4, 7, 8, 11
- 18) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: _____

DETAILED ACTION

This office action is in response to the election filed 9/5/00.

Election/Restrictions

Applicant's election without traverse of group I, claims 1 and 14-19 in Paper No. 10 is acknowledged.

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: 106 (see Fig. 1). Correction is required. ✓

Specification

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. ✓

The following title is suggested: Semiconductor encapsulant resin having an additive with a gradient concentration.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 14 and 16-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Ohta et al (5,641,997).

Ohta et al teach an encapsulant resin member (20) for a semiconductor having an additive (18) dissolved therein such that the concentration of the additive has a gradient in the direction of the thickness of the encapsulant resin member (Fig. 4 and col. 10, line 55 through col. 11, line 8).

Ohta et al teach a semiconductor element (5) encapsulated with an encapsulant resin (2), wherein an additive (18) dissolved in the encapsulant resin has a concentration gradient in the direction of the thickness of the encapsulant resin (Fig. 4 and 5 and col. 10, line 55 through col. 11, line 8).

Ohta et al teach that the additive may be a silane coupling agent (col. 22, lines 33-34) or an adhesive (col. 4, lines 45-47).

Ohta et al teach that the concentration of the additive is higher at a location near the semiconductor element but lower at a location remote from the semiconductor element (col. 18, lines 34-38).

Ohta et al teach that the concentration of the additive is lower at a location near the semiconductor element but higher at a location remote from the semiconductor element (Fig. 5 and col. 17, lines 55-58).

Claims 1, 14, 15 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Ishikawa et al (5,656,098).

Ishikawa et al teach an encapsulant resin member (1101a, 1101b, 1101c) for a semiconductor having an additive (1102a, 1102b) dissolved therein such that the concentration of the additive has a gradient in the direction of the thickness of the encapsulant resin member (Fig. 11 and col. 25, line 50 through col. 26, line 47).

Ishikawa et al teach a semiconductor element (1104b) encapsulated with an encapsulant resin (1101a, 1101b, 1101c), wherein an additive (1102a, 1102b) dissolved in the encapsulant resin has a concentration gradient in the direction of the thickness of the encapsulant resin (Fig. 11 and col. 25, line 50 through col. 26, line 47).

Ishikawa et al teach that the semiconductor element is a photovoltaic element (col. 25, line 42)

Ishikawa et al teach that the concentration of the additive is higher at a location near the semiconductor element but lower at a location remote from the semiconductor element (Fig. 11).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to J. L. Davis whose telephone number is (703) 308-6182. The examiner can normally be reached on M-Th (7:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead, Jr. can be reached on (703) 308-4940. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3432 for regular communications and (703) 308-7382 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

J.L.D.

jld

November 13, 2000

Carl Whitehead Jr.
CARL WHITEHEAD, JR.
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800